

Dalmatian Toadflax

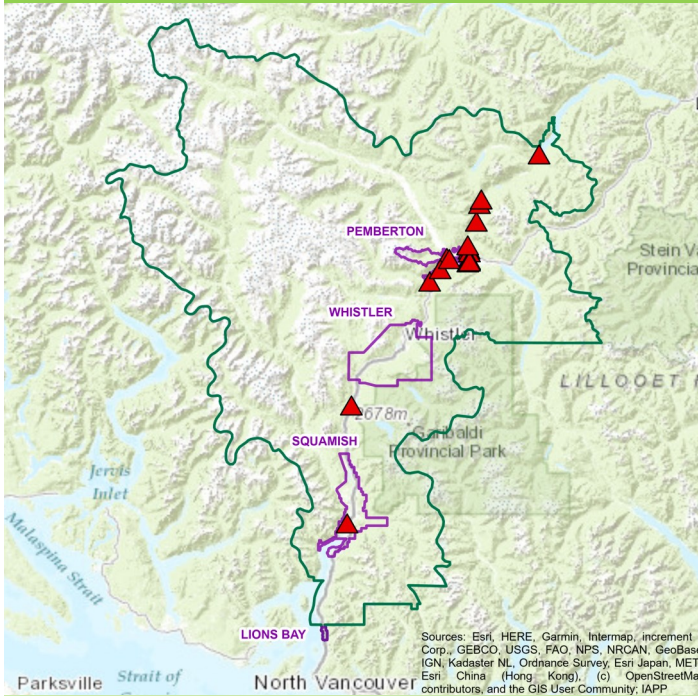
Linaria dalmatica

(AKA Broadleaf or Balkan toadflax, Wild snapdragon, *Linaria genistifolia*)

FACT SHEET

Squamish: Strategic Control | Whistler: Strategic Control | Pemberton: Strategic Control

DISTRIBUTION



Origin: Dalmatian Toadflax is native to Western Asia as well as the Mediterranean region; it was introduced to North America in the late 19th century as a garden ornamental.

Habitat: Dalmatian Toadflax is most commonly found on sandy or gravelly soil on roadsides, railroads, pastures, cultivated fields, rangelands and clear cuts. It is adapted to a wide variety of conditions: it thrives in poor, dry soils, but can also cause issues in high-quality soils. Dalmatian Toadflax does well in sunny to partly-shaded conditions.

Dalmatian Toadflax is often associated with several other invasive species. For example, it appears to be spreading as Diffuse and Spotted Knapweed are controlled. Similarly, Dalmatian Toadflax has been observed on rangeland sites after biological control suppressed St. John's Wort.

Reproduction: Dalmatian Toadflax reproduces by seed and vegetatively. One mature plant can produce up to 500,000 seeds each year, and seeds remain viable in the soil for up to 10 years.

It also reproduces vegetatively via creeping rhizomes, and from root fragments.

IDENTIFICATION



Dalmatian Toadflax is a short-lived perennial; individual plants can live 3 - 5 years.

Flowers: Are bright yellow and snapdragon-like, with an orange throat.

Stems: Are narrow and upright, originating from a stocky, woody base that can grow up to 1 m. Stems and leaves exude a milky sap when broken.

Leaves: Are alternate, and clasping on the stem. Dalmatian Toadflax leaves are heart-shaped, waxy and light green with a bluish cast.

Roots: Dalmatian Toadflax has rhizomes. The root system is perennial and spreading.

Similar Species:

- Invasive: Yellow or Common Toadflax (*Linaria vulgaris*)**

Dalmatian Toadflax leaves are clasping, shorter and more broad-based than Yellow Toadflax. Yellow Toadflax is also shorter (up to 60 cm tall).

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Vectors of Spread: Dalmatian Toadflax seeds are extremely small so they can be spread by the wind. Dried flower stalks and seeds can remain on the plant for up to 2 years, and the stalks easily break off and spread in the landscape. Seeds also mix with soil and can be transported on clothing, equipment or vehicles. Root fragments can create new plants, so improper plant disposal could also help spread Dalmatian Toadflax.

WHAT CAN I DO?

Dalmatian Toadflax is found in communities the Sea to Sky Region, so PREVENTION of further spread is key:

- Regularly monitor properties for weed infestations.
- Ensure soil and gravel are uncontaminated before transport.
- Don't unload, park, or store equipment or vehicles in infested areas; remove plant material from any equipment, vehicles, or clothing used in such areas and wash equipment and vehicles at designated cleaning sites before leaving infested areas.
- Minimize soil disturbances (e.g. use grazing plans that prevent soil exposure from overgrazing), and use seed mixes with dense, early colonization (e.g. alfalfa or barley) to re-vegetate exposed soil and resist invasion.
- Ensure plants (particularly flowering heads or root fragments) are bagged or covered to prevent spread during transport to designated disposal sites (e.g. landfill). **Do NOT compost.**

Dalmatian Toadflax can be controlled by:

- **Mechanical Control:** Hand-pull new and small infestations before the plants set seed, if the soil is not too hard or rocky. Ensure you remove as much of the root system as possible, as new shoots will re-sprout from any remaining lateral roots. In the case of more mature infestations, mechanical control must be repeated annually for at least 10 years to exhaust the seed bank. Mowing is only effective to diminish seed production, but not to control the plant.
- **Chemical Control:** Dalmatian Toadflax's waxy leaves make the use of an oil or silicon-based surfactant necessary. Satisfactory control can be achieved using dicamba; chlorsulphuron, glyphosate or imazapyr have also proven effective. Picloram can be effective, but it is not suitable for wet, coastal soils. We recommend that any herbicide application is carried out by a person holding a valid BC Pesticide Applicator Certificate. Before selecting and applying herbicides, you must review and follow herbicide labels and application rates; municipal, regional, provincial and federal laws and regulations; species-specific treatment recommendations, and site-specific goals and objectives.
- **Biological Control:** Several biocontrol agents have been released in BC, most notably *Mecinus janthinus*, a black stem-boring weevil. *Calophasia lunula*, a moth, as well as *Rhinusa antirrhini*, another weevil, are also known biocontrol agents.

If you suspect you have found Dalmatian Toadflax anywhere in the Sea to Sky region:

Contact the Sea to Sky Invasive Species Council to report and for the most recent, up to date control methods. All reports will be kept confidential.

References: California Invasive Plant Council, Coastal Invasive Species Council, Eflora BC, Government of BC, Invasive Plant Atlas of the United States, Invasive Species Compendium, King County, Lillooet Region Invasive Species Society, Okanagan Invasive Species Online, Texas Invasive Species Institute, United States Department of Agriculture.

IMPACTS

Ecological:

- **Toxic to livestock** (when consumed in significant amounts).
- **Out-competes with native grasses.**
- **Reduces biodiversity.**
- **Displaces native species:** its extensive, creeping root system allows it to thrive in poor conditions and take nutrients away from surrounding plants.

Economic: Reduces the quality of rangelands.



REPORT SIGHTINGS

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